

# **Unit 2 Creating Systems to Manage Information – 2019**



## **Level 3 National in Information Technology**

### **Part A Additional Sample Assessment Marking Guidance**

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## Introduction

This solution provided is only **one** example. Candidates could have approached it several different ways. It is important to read this guidance with each activity. If you are in any doubt whether the method a candidate has used is valid, please refer to your team leader. Do not assume a method that differs from solution is incorrect.

## Activity 1 – Database Relationship Screenprint (45 mins)

### How examiners must approach marking this activity

<b>Trait 1</b>	<ul style="list-style-type: none"><li>• Candidates should be using <b>all and only</b> attributes given in data file.</li><li>• More than two attributes (including keys) in wrong table class as significant data redundancy.</li><li>• Two attributes in wrong table/missing – Band 2</li><li>• One attribute in wrong table/missing – Band 3</li><li>• If truncated see how many missing from what you expect to see</li></ul>
<b>Trait 2</b>	<p><b>Relationship lines</b></p> <ul style="list-style-type: none"><li>• Do not need to check the fields they link to, referential integrity or anything else, only the lines are important for this</li></ul> <p><b>Relationship types</b></p> <ul style="list-style-type: none"><li>• Check referential integrity</li><li>• Must be links on correct fields and referential integrity present</li></ul> <p>Band 1 1 relationship line correct (ignore relationship type)</p> <p>Band 2 two relationship lines correct (ignore relationship type)</p> <p>Band 3 1 out of 2 relationships and relationship types correct (exactly three tables, two relationships and two relationship types present)</p> <p>Band 4 all relationship lines and relationship types correct (exactly 3 tables, 2 relationships and 2 relationship types present)</p>

**Note foreign key evidence for activity 2 taken from this screenprint.**

## Activity 2 – Table Structures and Validation (45 mins)

### How examiners must approach marking this activity

<b>Trait 1</b>	<p>Look for naming conventions and whether fields are sensible</p> <ul style="list-style-type: none"> <li>• tbl for table</li> <li>• fields should be consistent either have spaces or do not, camel case etc, so long as consistent. Fine for IDs to have no spaces even if other fields have spaces</li> <li>• If standard naming conventions are not used then cannot get higher than band 2 for trait 1.</li> </ul>
<b>Trait 2</b>	<p>Check against their structure in activity 1.</p> <ul style="list-style-type: none"> <li>• Primary and foreign keys should match</li> <li>• No new foreign keys should be introduced</li> <li>• No activity 1 then check against ERD given in solution.</li> <li>• Band 3 can also be read as “all foreign and most primary”</li> </ul>
<b>Trait 3</b>	<p>Look at data types.</p> <p>HouseNum: Text TicketPrice: Currency Event Date: Date/Time NumTickets: Number Rest short text Primary any suitable Foreign matches primary (Number foreign, AutoNumber primary etc.)</p> <ul style="list-style-type: none"> <li>• Class same datatype incorrectly used as <b>one</b> error.</li> <li>• <b>Limited</b> means <b>more than two</b> different datatypes are incorrect.</li> </ul>
<b>Trait 4</b>	<p><b>Validation must relate to the scenario and activity 2 for bands 3 and 4</b> <b>Validation rules must contain relevant validation text for band 4.</b></p> <p><b>Scenario requirements</b></p> <ul style="list-style-type: none"> <li>• Evening Christmas events have been planned for 20 to 22 December 2019.</li> <li>• Each event has a different ticket price.</li> <li>• There are two types of seat: seats without tables and seats with tables.</li> <li>• There must be at least one ticket purchased with each sale.</li> <li>• A sale cannot exceed eight tickets.</li> </ul> <p><b>Activity 2 requirements</b></p> <ul style="list-style-type: none"> <li>• a record will not save without the surname, house number and postcode of the customer being present</li> <li>• a record will not save if the postcode is not in the correct format</li> <li>• a record will not save if the event selected is invalid</li> <li>• a record will not save if the seat type is invalid</li> <li>• a record will not save if the number of tickets purchased is below the accepted range</li> <li>• a record will not save if the number of tickets purchased is above the accepted range</li> </ul> <p><b>Watch out for screenprints that do not show the actual field the validation is applied to.</b></p> <p><b>Just acceptable for keys</b> Would need to see name of table and field name (could be written)</p> <p><b>Just acceptable for non-keys</b> Would need to see the name of the field (could be written)</p>

	<b>Presence Check (1 required)</b> Should be on any of these 3 fields <ul style="list-style-type: none"> <li>• Surname</li> <li>• House number</li> <li>• Postcode</li> </ul>
	<b>Length Check (1 required)</b> <ul style="list-style-type: none"> <li>• Any text field</li> <li>• A length that is suitable</li> </ul>
	<b>Value lookup or range check (1 required)</b> <ul style="list-style-type: none"> <li>• NumTickets <ul style="list-style-type: none"> <li>◦ Range is between 1 and 8 with suitable validation text</li> <li>◦ Lookup values are 1 to 8 must have limit to list set to Yes to be classed as a range.</li> </ul> </li> <li>• SeatType <ul style="list-style-type: none"> <li>◦ values are table/no table</li> <li>◦ does not need required set to yes but will help with testing activity if they do that</li> </ul> </li> </ul>
	<b>Table Lookup (1 required)</b> <ul style="list-style-type: none"> <li>• Should have been applied to <b>EventID</b> if the requirements of the activity are taken into account.</li> <li>• Could use another foreign key</li> <li>• Limit to list must be set to Yes</li> </ul> Anything else is not suitable
	<b>Format Checks (1 required)</b> <ul style="list-style-type: none"> <li>• Postcode <ul style="list-style-type: none"> <li>◦ input mask, &gt;LL0\ 0LL</li> <li>◦ or appropriate validation rule and text</li> </ul> </li> </ul>
<b>Band 1</b>	<ul style="list-style-type: none"> <li>• At least 1 type of validation has been attempted – though may be inaccurate</li> </ul>
<b>Band 2</b>	<ul style="list-style-type: none"> <li>• 2 types of validation are accurate</li> <li>• Lookups shown in data sheet view validation text missing, limit to list not set to yes, presence check on primary key – can still be classed as being accurate in this band</li> <li>• If lookups shown in datasheet view must be showing the drop down items in the combo box</li> </ul>
<b>Band 3</b>	<ul style="list-style-type: none"> <li>• 3 types of validation are accurate</li> <li>• Lookups shown in data sheet view validation text missing, limit to list not set to yes, presence check on primary key – can still be classed as being accurate in this band</li> <li>• If lookups shown in datasheet view must be showing the drop down items in the combo box</li> </ul>
<b>Band 4</b>	<ul style="list-style-type: none"> <li>• All validation correct including suitable validation text, limit to list set to yes on table lookup</li> </ul>

## Activity 3 – Queries and Report (40 minutes)

(a) Create a query to display an alphabetically sorted list of the events running on the 20th and 21st of December. It must show event description and event ticket price only.

(b) Create a query that will calculate:

- the number of table tickets sold
- the income the tickets sold would generate.

Display:

- the event description
- the number of table seat tickets sold
- the income generated.

Trait 1	Band 1	1 query or the report present. At least two fields appropriate	
	Band 2	2 queries or query and report present. More than two fields appropriate	
	Band 3	Both queries and report present. Fields mostly appropriate	
	Band 4	Query A	
		In the grid	Displayed
		<ul style="list-style-type: none"><li>• EventDate</li><li>• EventDescription</li><li>• EventTicketPrice</li></ul>	<ul style="list-style-type: none"><li>• EventDescription</li><li>• EventTicketPrice</li></ul>
		Query B	
		In the grid	Displayed
		May include more (relevant) but at least <ul style="list-style-type: none"><li>• EventDescription</li><li>• TableSeatsSold</li><li>• SeatType</li><li>• Income</li></ul>	<ul style="list-style-type: none"><li>• EventDescription</li><li>• Table Tickets Sold</li><li>• Income</li></ul>
		Report	
		EventDescription, Number of Customers	All appear once only per event
		Table seats sold, Non table seats sold	
		Total Tickets	
Trait 2	9 sort/criteria/calculations in total		
	Query A (2) ascending sort (EventDescription), criteria for EventDate (20 and 21 December 2019)		
	Query B (3) criteria for table seats (table), number of table tickets sold (Sum(NumTickets)), income (sold * EventTicketPrice)		
	Report (4) number of customers, number of table tickets*, number no table tickets*, total tickets <i>*may use grouping to achieve as opposed to calculations</i>		
	Band 1	1 query or report has been attempted, little, if any are correct	
	Band 2	2 queries or 1 query and report has been attempted, 3 are correct	
	Band 3	All 3 have been attempted, 5 are correct	
Band 4	All 3 have been attempted all are correct		

<b>Trait 3</b>	<b>Band 1</b>	<p>Will have attempted at least one task</p> <p>Data may be truncated</p> <p>May be too many records showing due to lack of grouping or lack of relationships in query window</p>
	<b>Band 2</b>	<p>Will have attempted at least two tasks</p> <p>Limited truncation</p> <p>Report pdf may be missing</p> <p>Query B uses grouping and has correct relationships shown in the top of the query window</p>
	<b>Band 3</b>	<p>Will have attempted 1 query and the report</p> <p><b>Queries</b></p> <ul style="list-style-type: none"> <li>• Ordering of columns in the query results is appropriate</li> <li>• No truncation</li> <li>• Generated fields may not have appropriate names</li> <li>• Grouping and relationships correct (Query b)</li> </ul> <p><b>Report</b></p> <ul style="list-style-type: none"> <li>• Includes suitable title</li> <li>• Includes suitable field labels</li> <li>• No truncation of data</li> </ul>
	<b>Band 4</b>	<p>Will have attempted all tasks</p> <p><b>Queries</b></p> <ul style="list-style-type: none"> <li>• Ordering of columns in the query results is appropriate</li> <li>• Income is shown as currency with 2 decimal places</li> <li>• No truncation</li> <li>• Generated fields have names that aid readability</li> <li>• Grouping and relationships correct</li> </ul> <p><b>Report</b></p> <ul style="list-style-type: none"> <li>• Includes suitable title</li> <li>• Includes suitable field labels</li> <li>• No truncation of data</li> <li>• Good use of white space</li> </ul>

## Activity 4 – Testing (20 minutes)

### How examiners approach marking this activity

#### Tests to be carried out

- a record will not save without the surname being present
- a record will not save if the postcode is not in the correct format
- a record will not save if the event selected is invalid
- a record will not save if the seat type is invalid
- a record will not save if the number of tickets purchased is below the accepted range
- a record will not save if the number of tickets purchased is above the accepted range

<b>Band 1</b>	<ul style="list-style-type: none"><li>• Not all of the tests requested will be present or they may be inappropriate</li><li>• Type of test may not be present or may be incorrect</li><li>• There will be no test data, or it will not relate to the test being carried out</li><li>• Expected results may be inappropriate</li><li>• At least 1 test result will be appropriate</li><li>• Errors may be present that have not been identified</li></ul>
<b>Band 2</b>	<ul style="list-style-type: none"><li>• All of the tests will be present, but they may not be entirely appropriate</li><li>• Type of test may not be present or may be incorrect</li><li>• There will be test data, but it may be incomplete or general e.g. leave surname blank rather than stating exactly what data will be used in each field</li><li>• Expected results will be sensible but may not be detailed e.g. 'error message' rather than 'error message saying surname has to be present'</li><li>• Actual results will be present, but some may not be entirely appropriate</li><li>• Errors may/may not have been found</li></ul>
<b>Band 3</b>	<ul style="list-style-type: none"><li>• All tests will be present, and they will be appropriate</li><li>• Test data will be specific for all fields</li><li>• Type of test will be mostly accurate</li><li>• Expected results will be specific</li><li>• Actual results will show all of the test data used and any relevant messages</li><li>• Do not penalise if there are no errors and the testing is accurate</li></ul>



## Activity 5 – Evaluation (20 minutes)

### How examiners approach marking this activity

- Read evaluation and determine **best fit** for band based on understanding of technical concepts and technical vocabulary
- Assign position in **that** mark band based on evaluative content

What should be evaluated:

- how well your database structure has minimised data duplication
- how well your database structure meets these requirements:
  - there are two types of seat: seats without tables and seats with tables.
  - there must be at least one ticket purchased with each sale.
  - a sale cannot exceed eight tickets.

<b>Band 1</b>	Will be very superficial with major omissions
<b>Band 2</b>	Will discuss some aspects sensibly though may not fully explain them or relate them very well to their own solution.
<b>Band 3</b>	<p>Will discuss data duplication in terms of</p> <ul style="list-style-type: none"><li>• repeated customer data</li><li>• repeated event data</li><li>• removing repeated data into table whilst maintaining the link</li><li>• may pick up that seat type cannot meet 3NF as they cannot introduce any new fields i.e. it does not depend on the primary key.</li></ul> <p>Needs to be clear they are talking about their solution and not just trying to slip technical vocabulary in. Need to see clear understanding</p> <p>Meeting requirements Seat type may already have been discussed in terms of not meeting 3NF. Should also talk about their choice of validation and why it was the best. Should talk about their choice of validation for number of tickets sold and why it was the best.</p>